

SECTION I

INTRODUCTION TO THE RESOURCE CONSERVATION AND RECOVERY ACT

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OVERVIEW

The Resource Conservation and Recovery Act (RCRA), an amendment to the Solid Waste Disposal Act, was enacted in 1976 to address a problem of enormous magnitude — the huge volumes of municipal and industrial solid waste generated nationwide.

There was a time when the amount of waste produced in the United States was small and its impact on the environment was viewed as relatively minor. Times have changed. With the industrial revolution in the late 1800s, the country

began to experience unparalleled growth. New products were developed, and the consumer was offered an ever-expanding array of material goods.

This growth continued through the early 20th Century and accelerated after World War II when the nation's industrial base, strengthened by war, turned its energy toward domestic production.

The results of growth, however, were not all positive. While the country produced more goods and prospered economically, it also generated more waste, both hazardous and nonhazardous.

For example, at the end of World War II, U.S.

industry was generating roughly 500,000 metric tons of hazardous waste

per year. This amount continued to increase over the next 50 years. A national survey conducted by EPA in 1996 estimated that 279 million metric tons of hazardous waste were generated nationwide in 1995, more than a 500-fold increase.

Unfortunately, this phenomenal growth in waste production was not mirrored by advancements in the field of waste management. Much of the waste produced entered the environment, where it posed a serious threat to ecological systems and public health.

In the mid-1970s, it became clear to Congress and the American people that action had to be taken to ensure that wastes were managed

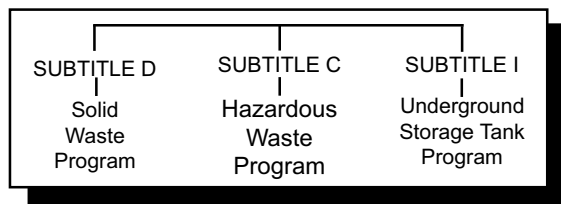


properly. This realization began the process that resulted in the passage of RCRA. The goals set by RCRA are:

- To protect human health and the environment from the hazards posed by waste disposal
- To conserve energy and natural resources through waste recycling and recovery
- To reduce or eliminate, as expeditiously as possible, the amount of waste generated, including hazardous waste
- To ensure that wastes are managed in a manner that is protective of human health and the environment.

To achieve these goals, RCRA establishes three distinct yet interrelated programs (see Figure I-1). The solid waste program, under RCRA Subtitle D, encourages states to develop comprehensive plans to manage nonhazardous industrial solid waste and municipal solid waste, sets criteria for municipal solid waste landfills (MSWLFs) and

Figure I-1: RCRA'S THREE INTERRELATED PROGRAMS



other solid waste disposal facilities, and prohibits the open dumping of solid waste. The hazardous waste program, under RCRA Subtitle C, establishes a system for controlling hazardous waste from the time it is generated until its ultimate disposal — in effect, from cradle to grave. Finally, the underground storage tank (UST) program, under RCRA Subtitle I, regulates underground tanks storing hazardous substances and petroleum products.

Although RCRA creates the framework for the proper management of hazardous and nonhazardous solid waste, it does not address the problems of hazardous waste found at inactive or abandoned sites or those resulting from spills that require emergency response. These problems are addressed by a different act, the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly called Superfund, which was enacted in 1980.

This section provides an overview of RCRA, including the Act, regulations, guidance, and policy. In addition, this section discusses the three major programs that comprise RCRA and the interrelationships between them. Finally, this section details where RCRA is today, introduces who is involved in RCRA, and outlines the remainder of this manual.

RCRA: WHAT IT IS

Although RCRA is the acronym for the Resource Conservation and Recovery Act, it is often used interchangeably to refer to the law, the regulations, and EPA policy and guidance. To avoid confusion in this manual, the term “the Act” refers to the public law and statutory requirements passed by Congress. The term “regulations” is used interchangeably with standards or regulatory requirements, and means the rules developed by EPA to implement the statute.

■ The Act

The Act provides general guidelines for the waste management program envisioned by Congress. This description is in broad terms (e.g.,

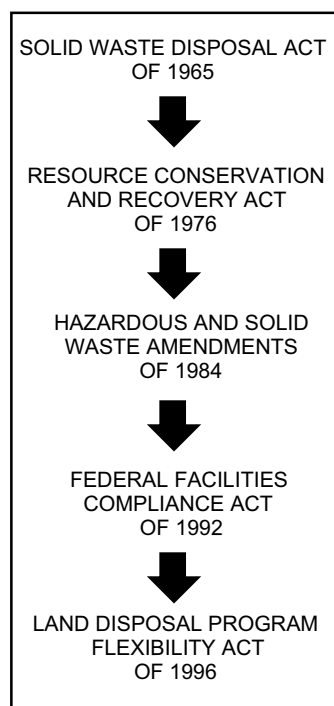
THE ACT

The law that describes the kind of waste management program that Congress wants to establish. The Act also provides the Administrator of EPA (or his or her designee) with the authority to implement the program.

directing EPA to develop and promulgate criteria for identifying hazardous waste). The Act also provides the EPA Administrator (or his or her representative) with the authority necessary to develop these broad standards into specific requirements that will guide the actions of the regulated community.

What we commonly know as RCRA, or the Act, is actually a combination of the first federal solid waste statutes and all subsequent amendments (see Figure I-2). In 1965, Congress enacted the Solid Waste Disposal Act, the first statute that specifically focused on improving solid

Figure I-2: THE EVOLUTION OF SIGNIFICANT RCRA LEGISLATION



waste disposal methods. The Solid Waste Disposal Act established economic incentives for states to develop planning, training, research, and demonstration projects for the management of solid waste. The Act was amended in 1976 by RCRA, which substantially remodeled our nation's solid waste management system and laid out the basic framework of the current hazardous waste management program.

The Act, which has been amended several times since 1976, continues to evolve as Congress alters it to reflect changing needs. The Act was amended significantly on November 8, 1984, by the Hazardous and Solid Waste Amendments (HSWA), which expanded the scope and requirements of RCRA. HSWA was created largely

in response to citizen concerns that existing methods of hazardous waste disposal, particularly land disposal, were not safe. Because of their significance and differences in their implementation, HSWA provisions are emphasized throughout this manual. Congress also revised RCRA in 1992 by passing the Federal Facility Compliance Act, which strengthened the authority to enforce RCRA at federal facilities. In addition, the Land Disposal Program Flexibility Act of 1996 amended RCRA to provide regulatory flexibility for the land disposal of certain wastes.

The structure of the Act is straightforward. It is currently divided into 10 subtitles (see Figure I-3). Subtitles A, B, E, F, G, H, and J outline general provisions; authorities of the Administrator; duties of the Secretary of Commerce; federal responsibilities; miscellaneous provisions; research, development, demonstration, and information requirements; and medical waste tracking. The other subtitles lay out the framework for the three major programs that comprise RCRA: the hazardous waste management program (Subtitle C), the solid waste program (Subtitle D), and the UST program (Subtitle I).

Figure I-3: OUTLINE OF THE ACT

Subtitle	Provisions
A	General Provisions
B	Office of Solid Waste; Authorities of the Administrator and Interagency Coordinating Committee
C	Hazardous Waste Management
D	State or Regional Solid Waste Plans
E	Duties of the Secretary of Commerce in Resource and Recovery
F	Federal Responsibilities
G	Miscellaneous Provisions
H	Research, Development, Demonstration, and Information
I	Regulation of Underground Storage Tanks
J	Standards for the Tracking and Management of Medical Waste

■ Regulations

The Act includes a Congressional mandate directing EPA to develop a comprehensive set of regulations. **Regulations**, or **rulemakings**, are issued by an agency, such as EPA, that translate the general mandate of a statute into a set of requirements that the regulated community and the agency must work within.

THE REGULATIONS

The legal mechanism that establishes standards or imposes requirements as mandated by the Act. RCRA regulations are promulgated by EPA, published in the *Federal Register*, and codified in the Code of Federal Regulations.

Regulations are developed by EPA in an open and public manner according to an established process. When a regulation is formally proposed, it is published in an official government document called the *Federal Register* to notify the public of EPA's intent to create new regulations or modify existing ones. EPA provides the public, which includes the potentially regulated community, with an opportunity to submit comments. Following the comment period, EPA may revise the proposed rule based on both an internal review process and public comments.

The final regulation is published, or promulgated, in the *Federal Register*. Included with the regulation is discussion of the Agency's rationale for the regulatory approach, known as preamble language. Final regulations are compiled annually and incorporated in the Code of Federal Regulations (CFR) according to a highly structured format based on the topic of the regulation. This latter process is called

codification, and each CFR title corresponds to a different regulatory authority. For example, the Occupational Safety and Health Administration's (OSHA's) regulations are codified in Title 29 of the CFR; EPA's

are in Title 40. The codified RCRA regulations can be found in Title 40 of the CFR, Parts 240-282. These regulations are often cited as 40 CFR, with the part listed afterward (e.g., 40 CFR Part 264), or the part and section (e.g., 40 CFR §264.10).

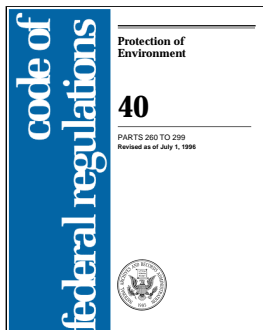
Although this relationship between an Act and the regulations is the norm, the relationship between HSWA and its regulations differs slightly. Congress,

through HSWA, not only provided EPA with a general mandate to promulgate regulations, but also placed explicit instructions in the Statute to develop certain regulations. Many of these requirements are so specific that EPA incorporated them directly into the regulations. HSWA is all the more significant because of the ambitious schedules that Congress established for implementation of the Act's provisions. Another unique aspect of HSWA is that it established **hammer provisions**, or statutory requirements that would go into effect automatically (with the force of regulations) if EPA failed to issue regulations by certain dates.

The interpretation of statutory language does not end with the codification of regulations. EPA further clarifies the requirements of the Act and its regulations through guidance documents and policy.

■ Guidance and Policy

Guidance documents are issued by EPA primarily to elaborate and provide direction



GUIDANCE

Documents developed and issued by EPA to provide instructions on how to implement requirements of either the Act or regulations.



for implementing and complying with regulations. They are essentially “how to” documents. For example, the regulations in 40 CFR Part 270 detail what is required in a permit application for a hazardous waste management facility, while the guidance for this Part suggests how to evaluate a permit application to ensure that all information has been included. Guidance documents also elaborate on the Agency’s interpretation of the requirements of the Act.

Guidance = How to
Policy = Should do

Policy statements, on the other hand, specify operating procedures that should generally be followed. They are mechanisms used by EPA program offices to outline the manner in which pieces of the RCRA program are implemented. For example, EPA’s Office of Enforcement and Compliance Assurance (OECA) may issue a policy outlining what enforcement action should generally be taken if a ground water violation is found. In many cases, policy statements are

POLICY

Statements developed by EPA outlining a position on a topic or giving instructions on how a procedure should be conducted.

addressed to the staff working on implementation, but they may also be addressed to the regulated community.

RCRA: HOW IT WORKS

The three programs established under RCRA — solid waste, hazardous waste, and USTs — are described in detail in the following chapters. To provide an overall perspective of how RCRA works, each of these programs and their interrelationships are briefly summarized here. In this manual, the solid waste program (Subtitle D) is discussed before the hazardous waste program (Subtitle C). Although this is alphabetically out of order, the structure is designed to benefit the reader.

■ Subtitle D — Solid Waste

RCRA Subtitle D focuses on state and local governments as the primary planning, regulating, and implementing entities for the management of nonhazardous solid waste, such as household garbage and nonhazardous industrial solid waste. EPA provides these state and local agencies with information, guidance, policy and regulations through workshops and publications to help states and the regulated community make better decisions in dealing with waste issues, to reap the environmental and economic benefits of source reduction and recycling of solid wastes, and to require upgrading or closure of all environmentally unsound disposal units. In order to promote the use of safer units for solid waste disposal, EPA developed federal criteria for the proper design and operation of MSWLFs and other solid waste disposal facilities. Many states have adopted these criteria into their state solid waste programs.

■ Subtitle C — Hazardous Waste

RCRA Subtitle C establishes a federal program to manage hazardous wastes from **cradle to grave**. The objective of the Subtitle C program is to ensure that hazardous waste is handled in a manner that protects human health and the environment. To this end, there are Subtitle C regulations for the generation; transportation; and treatment, storage, or disposal of hazardous wastes. In practical terms, this means regulating a large number of hazardous waste handlers. As of 1996, EPA had on record more than 1,900 treatment, storage, and disposal facilities (TSDFs); 23,000 transporters; and about 775,000 generators.

The Subtitle C program has resulted in perhaps the most comprehensive regulations EPA has ever developed. The regulations first identify the criteria to determine which solid wastes are hazardous, and then establish various requirements for the three categories of hazardous waste handlers: generators, transporters, and

TSDFs. In addition, the Subtitle C regulations set technical standards for the design and safe operation of TSDFs. These standards are designed to minimize the release of hazardous waste into the environment. Furthermore, the regulations for TSDFs serve as the basis for developing and issuing the permits required by the Act for each facility. Permits are essential to making the Subtitle C regulatory program work, since it is through the permitting process that EPA or a state applies the technical standards to TSDFs.

One of the primary differences between Subtitle C and Subtitle D is the type of waste each regulates. Subtitle C regulates only hazardous waste, a subset of solid waste, whereas Subtitle D primarily manages nonhazardous solid waste.

■ Subtitle I — Underground Storage Tanks

RCRA Subtitle I regulates underground storage tanks (USTs) that contain petroleum or hazardous substances (as defined under CERCLA). A major objective of Subtitle I is to prevent and clean up releases from tanks. Under Subtitle I, EPA has developed performance standards for new tanks, upgrading requirements for existing tanks, and regulations to prevent, detect, and clean up releases at all UST sites. This program is similar to the Subtitle C program in that state programs may be approved to operate in lieu of the federal program.

WHO IS INVOLVED IN RCRA?

The RCRA program involves a myriad of people and organizations with varying roles. Congress and the President set overall national direction for the RCRA program through amendments to the Act. EPA, through its Office of Solid Waste and Emergency Response (OSWER), translates this direction into operating programs by developing regulations, guidance, and policy.



Site-specific implementation of the RCRA program is the responsibility of the EPA Regions and states. All three RCRA programs — hazardous waste, solid waste, and USTs — have mechanisms through which states can exercise key program responsibilities. Initial federal responsibilities vary among the different programs.

Under Subtitle D, EPA established minimum criteria for MSWLFs and required each state to gain approval for their MSWLF permitting program through an approval process which ensures that the state's program meets minimum federal criteria. Most of the Subtitle D solid waste program is overseen by the states and compliance is assured through state-issued permits.

State involvement in the Subtitle C program is similar to involvement in the Subtitle D program. Under Subtitle C, in the authorization process, EPA reviews a state's hazardous waste program and, if it is acceptable, grants the state authority to run its program instead of EPA running the federal program. States that have been authorized by EPA to run their hazardous waste programs in lieu of the federal program are known as authorized states.

Under Subtitle I, EPA also allows state UST programs to operate in lieu of the federal program provided that a state's regulatory provisions are at least as stringent as the federal provisions.

The **regulated community** that must understand and comply with RCRA and its regulations is a large, diverse group. It includes not only facilities typically thought of as hazardous waste generators, such as industrial manufacturers, but also government agencies and small businesses, such as a local dry cleaner generating small amounts of hazardous solvents, or a gas station with underground petroleum tanks.

Lastly, the general public plays a key role in RCRA by providing input and comments during almost every stage of the program's development and implementation, through rulemaking participation, comments on TSDF permits, and political action.

RCRA TODAY

When RCRA was first enacted in 1976, EPA was faced with a huge implementation task. The bulk of the activity during the first few years focused on developing basic regulations for the management of both hazardous and nonhazardous solid waste in order to provide adequate protection of human health and the environment. Now, most of these elementary standards are in place, but the RCRA program has not remained stagnant. EPA continues to measure and analyze the program's results to help identify ways to make the RCRA program more efficient, and new ways to achieve better, more cost-effective protection of public health and the environment.

■ Waste Minimization

EPA has devoted much of its efforts in the past to the treatment and cleanup of pollutants after they are generated, and in fact, great strides have been made in environmental protection over the past 20 years. EPA realizes, however, that there are environmental and economic incentives to reducing or eliminating waste before it is even generated. Both the RCRA solid and hazardous waste programs have adopted waste minimization elements. EPA uses the term **waste minimization** to mean the reduction, to the extent feasible, of solid and hazardous waste. Both programs

WASTE MINIMIZATION

Waste minimization is the reduction, to the extent feasible, of hazardous waste generated prior to any treatment, storage, or disposal of the waste.

emphasize source reduction (reducing waste at its source, before it is even generated) and environmentally sound recycling.

In the text of HSWA, Congress specifically declared that the reduction or elimination of hazardous waste generation at the source should be a priority of the RCRA hazardous waste program. To encourage hazardous waste minimization nationwide, EPA developed the Waste Minimization National Plan. This initiative promotes a long-term national effort to minimize the generation of hazardous chemicals in wastes. The goals of the National Plan include:

- Reducing the presence of the most persistent, bioaccumulative, and toxic chemicals in hazardous wastes 25% by the year 2000, and 50% by the year 2005
- Emphasizing source reduction and environmental source recycling over treatment and disposal
- Preventing transfers of chemical releases from one medium (air, water, land) to another.

EPA has also developed strategies and priorities for encouraging source reduction and recycling of nonhazardous solid waste streams regulated by RCRA Subtitle D. EPA envisions a flexible integrated waste management hierarchy where source reduction, recycling, waste combustion, and landfilling all play a part in the successful management of solid waste at the local level. Source reduction and recycling are preferred approaches and are at the top of the management hierarchy. Waste combustion and landfilling are less emphasized. In addition, to expand the use of recovered materials, EPA has developed the procurement program, which establishes guidelines recommending that federal agencies purchase products containing recycled materials.

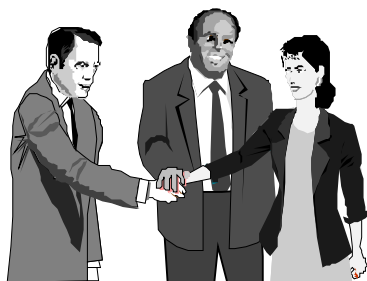
■ Streamlining RCRA Regulation

EPA is currently identifying options to reinvent the RCRA program by streamlining compliance requirements. EPA's reinvention philosophy includes providing flexibility in how results are achieved, sharing information and decision-making with all stakeholders, creating incentives for compliance with environmental requirements, lessening the burden of complying with environmental requirements, and seeking a better interface with other environmental regulations.

EPA is also placing an increasing emphasis on making the RCRA hazardous waste program more risk-based (i.e., ensuring that the regulations correspond to the level of risk posed by the hazardous waste being regulated). This approach is particularly valuable for the cleanup of contaminated sites. Placing excessive regulation on sites whose contamination poses low risks to human health and the environment may create disincentives for cleanup. Focusing regulations on risk would allow states greater flexibility in determining the appropriate way to regulate sites contaminated with relatively small quantities of hazardous waste.

■ Subtitle C Federal/State Partnership

RCRA, like most federal environmental legislation, encourages states to develop their own hazardous waste programs as an alternative to direct implementation of the federal program. At the inception of RCRA, Congress envisioned that a successful national program would be put in place through joint action of the federal and state governments — EPA would set national goals and standards based on the Agency's technical expertise, and the states would be responsible for implementing those policies.



EPA is seeking to strengthen this federal/state relationship by streamlining the authorization process. Because EPA's hazardous waste regulations are developed in stages, EPA has a phased approach to approving state programs. Each state must either adopt the new regulations or upgrade those elements of its program that do not meet federal standards. The authorization process is often long and cumbersome. EPA has proposed streamlined procedures for these state revisions to make the process quicker and more efficient. These procedures will also help reduce the amount of resources needed for preparing and processing authorization applications, and will speed up state implementation of additional parts of the RCRA program.

■ Demonstrating Results

It is as important to determine whether these protective environmental goals are actually being achieved as it is to develop them in the first place. Recognizing the importance of evaluating the performance of all government agencies, including EPA, Congress enacted the Government Performance and Results Act (GPRA) of 1993 to provide for the establishment of strategic planning and performance measurement in the federal government. The intent of GPRA is to improve public confidence in federal agencies by holding agencies accountable for achieving program results.

EPA has adopted the GPRA framework by developing an Agency-wide strategic plan that encompasses all EPA offices and program areas. The strategic plan contains several goals specific to RCRA, such as preventing pollution, reducing risk to humans and the environment, better waste management, and restoration of contaminated waste sites. As part of the requirements of GPRA, EPA has also developed specific, quantifiable objectives for each of these goals. Progress toward these target objectives will be measured and evaluated annually. This framework ensures that EPA can evaluate the success of its different programs and can demonstrate tangible results to the general public.

OUTLINE OF THE MANUAL

The remainder of this manual details the three RCRA programs briefly discussed in this introduction. The manual also describes two other components of RCRA: the federal procurement and medical waste tracking programs. In addition, the manual discusses the interrelationships between RCRA's Subtitle C program and other environmental statutes, as well as RCRA's public participation provisions. To supplement this technical description of the RCRA regulatory program, the manual also contains appendices that present important RCRA forms and paperwork requirements, a glossary (for the reader's convenience, the terms that appear in this glossary have been bolded throughout the text), a list of acronyms and abbreviations, an OSW organization chart, useful environmental contacts, and a keyword index.

SUMMARY

RCRA was passed in 1976, as an amendment to the Solid Waste Disposal Act of 1965, to ensure that solid wastes are managed in an environmentally sound manner. The broad goals set by RCRA are:

- To protect human health and the environment from the hazards posed by waste disposal
- To conserve energy and natural resources through waste recycling and recovery
- To reduce or eliminate, as expeditiously as possible, the amount of waste generated, including hazardous waste
- To ensure that wastes are managed in a manner that is protective of human health and the environment.

To achieve the goals, three distinct yet interrelated programs exist under RCRA:

- Subtitle D – The solid waste program promotes and encourages the environmentally sound management of solid waste. It includes minimum federal technical standards and guidelines for state solid waste plans.
- Subtitle C – The hazardous waste program establishes a management system that regulates hazardous waste from the time it is generated until its ultimate disposal, in effect, from cradle to grave.
- Subtitle I – The UST program regulates underground tanks that contain petroleum or hazardous substances (as defined under CERCLA).

There are several components of RCRA:

- Act – The law that describes the kind of waste management program that Congress wants to establish. The Act also provides the Administrator of EPA (or his or her designee) with the authority to implement the Act.
- Regulations – The legal mechanism that establishes standards or imposes requirements as mandated by the Act. RCRA regulations are promulgated by EPA, published in the *Federal Register*, and codified in the CFR.
- Guidance – Documents developed and issued by EPA to provide instructions on how to implement requirements of either the Act or regulations.
- Policy – Statements developed by EPA outlining a position on a topic or giving instructions on how a procedure should be conducted.

RCRA continues to change with amendments to the Statute. HSWA, in particular, significantly expanded both the scope and detailed requirements of the Act, especially in the context of the land disposal of hazardous wastes. Many parties are involved in developing and

implementing the RCRA program, including Congress, EPA, states, regulated entities, and the general public.

EPA continues to improve the RCRA program by using measurable results to identify and promote new initiatives, such as encouraging waste minimization, improving the federal/state partnership in the hazardous waste program, and aiding state and local governments in reaping the environmental and economic benefits of source reduction and recycling.